



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,295	11/24/2003	Sergio Martins Loureiro	130497-1	4132

6147 7590 10/30/2006

GENERAL ELECTRIC COMPANY  
GLOBAL RESEARCH  
PATENT DOCKET RM. BLDG. K1-4A59  
NISKAYUNA, NY 12309

EXAMINER

PARKER, FREDERICK JOHN

ART UNIT	PAPER NUMBER
----------	--------------

1762

DATE MAILED: 10/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/720,295	<b>Applicant(s)</b> LOUREIRO ET AL.	
	<b>Examiner</b> Frederick J. Parker	<b>Art Unit</b> 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 47-61 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 47-61 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

#### ***Drawings***

1. The replacement drawing in response to the Objections of the Previous Office Action are acknowledged and appreciated, and the Examiner withdraws the objections.

#### ***Specification***

2. The amendments in response to the Objections to the Abstract and specification of the Previous Office Action are acknowledged and appreciated, and the Examiner withdraws the objections, except as repeated.
3. The disclosure is objected to because of the following informalities: [0041,42] all instances of "cristoballite" are mis-spellings. Applicants assertion that current spelling is correct is mistaken. "Cristobalite" is the accepted spelling. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

4. The amendments in response to the 35 USC 112 rejections of the Previous Office Action are acknowledged and appreciated, and the Examiner withdraws the rejections.
5. The prior art rejections of the previous Office Action are withdrawn because of Applicants' Remarks, and replaced by those which follow. This Action is therefore Non-Final.

#### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 1762

7. Claims 47-60 are rejected under 35 U.S.C. 102(e) as being anticipated by Chao et al US 2003/0152759 (EFD 1/29/02).

Chao teaches forming templated nanostructured materials comprising providing a mesoporous host material with uniform and ordered mesopores and subsequently incorporating charged particles (e.g. metal salts, oxo or other complexes, metal ligand hybrids, etc per claims 49,53) into the mesoporous material and treating the product, to cause oxidation or precipitation [0029] per claim 49c, as to form metal oxides. Mesoporous hosts include silica, titania, etc in numerous forms [0020]. Particle precursors may be added as solutions [0025]. Oxidation of metal complexes using oxygen is cited [0027]. Particles are inherently less than 100 nm because the mesopores into which they are incorporated are 0.1-50 nm.

The mesoporous host may be prepared by mixing functional groups comprising amines, alcohols, etc with attaching groups e.g. organic silanes which are treated by ageing, washing, and drying to form templated mesoporous hosts {0019-0022}. The Examples teach forming templated silica hosts, which as in Ex. 10 [0040] an iron solution is added, followed by heating in oxygen at 500 C for 6 hours, per claims 50-51.

***Claim Rejections - 35 USC § 103***

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claim 61 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chao in view of Pham US 6548440.

Art Unit: 1762


Chao is cited for the same reasons previously discussed, which are incorporated herein. Forming methods are not cited. However, Pham teaches an analogous method of forming templated mesoporous materials comprising metal oxide particles <100 nm, in which spray drying is taught on col. 11,44 to col. 12, 63 and elsewhere as a means to form the metal oxide templated silica meso-structure. Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to carry out the method of Chao et al by utilizing spray drying as taught by the similar process of Pham because of the expectation of forming a metal oxide templated silica meso-structure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frederick J. Parker whose telephone number is 571/ 272-1426. The examiner can normally be reached on Mon-Thur. 6:15am -3:45pm, and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571/272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1762

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Frederick J. Parker  
Primary Examiner  
Art Unit 1762

fjp